B₁ ... B₂

Disjoint   Nested   Overlapped

FIG. 1

"stack" -
(associative
memory)

match

	v	p	TA
B₆	1	p_6	1200
B₄	0	p_4	800
B₂	1	p_2	1000

Main
Memory

1000
iiptr

address
data

$P_{Instr.}$

| p_{10} | cp_2 | (opcode, addresses, ...) |

cp_T new I at 1000 (being loaded)

p_{10} | p_r

Instruction
Window

Key:
v - valid entry
p - predicate address
TA - Target Address
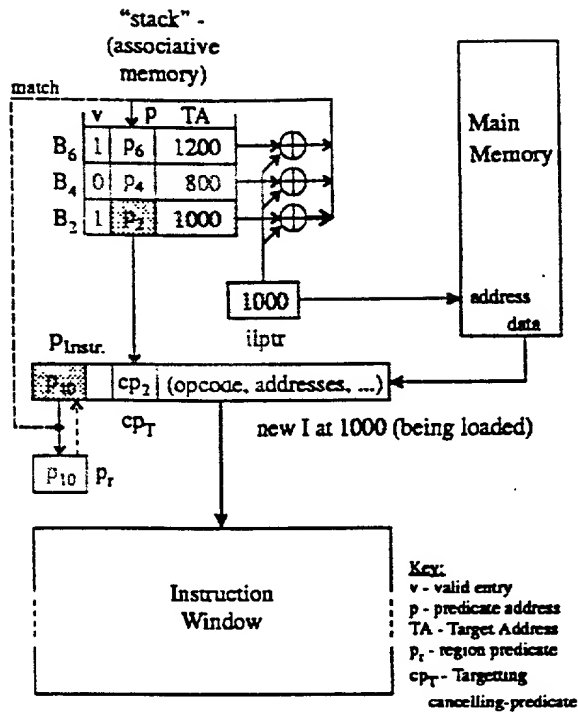p_r - region predicate
cp_T - Targetting
     cancelling-predicate

Snapshot taken at t = 9+ of Example 5.
- new I matches target address in stack

FIG. 2

				predicate-assignment (at load time)						predicate-use (at code execution time)		
load time	address	code		stack				$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out}	p_r - condition for I execution
				B	v	p	TA					
1	100	I_1	z = x op y			empty		1	0	$p_1=1$	-	1
2	200	B_2	if (bc$_2$) goto 400	B_2	1	P_2	400	1	0	$p_2=\overline{bc}_2$	bc_2	1
3	300	I_3		B_2	1	P_2	400	P_2	0	-	-	$\overline{bc}_2$
4	400	I_4				empty		P_2	cp_2	$\overline{bc}_2+bc_2$	-	$\overline{bc}_2+bc_2=1$
5	500	I_5				empty		P_4	0	-	-	$p_4=1$
6	600	B_6	if (bc$_6$) goto 800	B_6	1	P_6	800	P_4	0	$\overline{bc}_6\cdot p_4$	$bc_6\cdot p_4$	1
7	700	I_7		B_6	1	P_6	800	P_6	0	-	-	$\overline{bc}_6$
8	800	I_8				empty		P_6	cp_6	$\overline{bc}_6+bc_6$	-	$\overline{bc}_6+bc_6=1$
9	900	I_9				empty		P_8	0	-	-	$p_6=1$

Equations - for "T": $p_r=p_{out}=p_{in}+cp_{in}$; for "B": $p_{out}=\overline{bc}\cdot p_{in}$, $cp_{out}=bc\cdot p_{in}$

FIG. 3

| | | | | predicate-assignment (at load time) | | | | | predicate-use (at code execution time) | | |
| | | | | stack | | | | | | | |
load time	address	code		B	v	p	TA	$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out}	p_I - condition for I execution
1	100	I_1	z = x op y			empty		1	0	$p_1=1$	-	1
2	200	B_2	if (bc_2) goto 800	B_2	1	P_2	800	1	0	$p_2=\overline{bc_2}$	bc_2	1
3	300	I_3		B_2	1	P_2	800	P_2	0	-	-	$\overline{bc_2}$
4	400	B_4	if (bc_4) goto 600	B_4 B_2	1 1	P_4 P_2	600 800	P_2	0	$\overline{bc_4}\cdot P_2$	$bc_4\cdot P_2$	1
5	500	I_5		B_4 B_2	1 1	P_4 P_2	600 800	P_4	0	-	-	$\overline{bc_2}\cdot\overline{bc_4}$
6	600	I_6		B_2	1	P_2	800	P_4	cp_4	p_4+cp_4	-	$\overline{bc_4}\cdot\overline{bc_2}+bc_4\cdot\overline{bc_2}=\overline{bc_2}$
7	700	I_7		B_2	1	P_2	800	P_6	0	-	-	$\overline{bc_2}$
8	800	I_8				empty		P_6	cp_2	p_6+cp_2	-	$\overline{bc_2}+bc_2=1$
9	900	I_9				empty		P_8	0	-	-	1

Equations -   for "I": $p_I=p_{out}=p_{in}+cp_{in}$;   for "B": $p_{out}=\overline{bc}\cdot p_{in}$, $cp_{out}=bc\cdot p_{in}$

FIG. 4

predicate-assignment (at load time) | predicate-use (at code execution time)

load time	address	code		stack B v p TA	$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out}	p_I - condition for I execution
1	100	I_1	$z = x$ op y	empty	1	0	$p_1=1$	-	1
2	200	B_2	if (bc_2) goto 600	B_2 |1|p_2|600|	1	0	$p_2=\overline{bc_2}$	bc_2	1
3	300	I_3		B_2 |1|p_2|600|	p_2	0	-	-	$\overline{bc_2}$
4	400	B_4	if (bc_4) goto 800	B_4 |1|p_4|800| B_2 |1|p_2|600|	p_2	0	$\overline{bc_4}\cdot p_2$	$bc_4\cdot p_2$	1
5	500	I_5		B_4 |1|p_4|800| B_2 |1|p_2|600|	p_4	0	-	-	$\overline{bc_4}\cdot\overline{bc_2}$
6	600	I_6		B_4 |1|p_4|800| B_2 |0|p_2|600|	p_4	cp_2	p_4+cp_2	-	$(\overline{bc_4}\cdot\overline{bc_2})+bc_2=\overline{bc_4}+bc_2$
7	700	I_7		B_4 |1|p_4|800| B_2 |0|p_2|600|	p_6	0	-	-	$\overline{bc_4}+bc_2$
8	800	I_8		empty	p_6	cp_4	p_6+cp_4	-	$\overline{bc_4}+bc_2+(bc_4\cdot\overline{bc_2})=1$
9	900	I_9		empty	p_8	0	-	-	1

Equations -   for "I": $p_I=p_{out}=p_{in}+cp_{in}$;   for "B": $p_{out}=\overline{bc}\cdot p_{in}$, $cp_{out}=bc\cdot p_{in}$

FIG. 5

				predicate-assignment (at load time)			predicate-use (at code execution time)		
load time	address	code		stack: B | v | p | TA	$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out}	p_I - condition for I execution
1	100	I_1	z = x op y	empty	1	0	$p_1=1$	-	1
2	200	B_2	if (bc$_2$) goto 1000	B_2 | 1 | p_2 | 1000	1	0	$p_2=\overline{bc}_2$	bc_2	1
3	300	I_3		B_2 | 1 | p_2 | 1000	p_2	0	-	-	$\overline{bc}_2$
4	400	B_4	if (bc$_4$) goto 800	B_4 | 1 | p_4 | 800 B_2 | 1 | p_2 | 1000	p_2	0	$\overline{bc}_4\cdot p_2$	$bc_4\cdot p_2$	1
5	500	I_5		B_4 | 1 | p_4 | 800 B_2 | 1 | p_2 | 1000	p_4	0	-	-	$\overline{bc}_4\cdot\overline{bc}_2$
6	600	B_6	if (bc$_6$) goto 1200	B_6 | 1 | p_6 | 1200 B_4 | 1 | p_4 | 800 B_2 | 1 | p_2 | 1000	p_4	0	$\overline{bc}_6\cdot p_4$	$bc_6\cdot p_4$	1
7	700	I_7		B_6 | 1 | p_6 | 1200 B_4 | 1 | p_4 | 800 B_2 | 1 | p_2 | 1000	p_6	0	-	-	$\overline{bc}_6\cdot\overline{bc}_4\cdot\overline{bc}_2$
8	800	I_8		B_6 | 1 | p_6 | 1200 B_4 | 0 | p_4 | 800 B_2 | 1 | p_2 | 1000	p_6	cp_4	p_6+cp_4	-	$(\overline{bc}_6\cdot\overline{bc}_4\cdot\overline{bc}_2)+(bc_4\cdot\overline{bc}_2)$ $=(\overline{bc}_6+bc_4)\overline{bc}_2$
9	900	I_9		B_6 | 1 | p_6 | 1200 B_4 | 0 | p_4 | 800 B_2 | 1 | p_2 | 1000	p_8	0	-	-	$(\overline{bc}_6+bc_4)\overline{bc}_2$
10	1000	I_{10}		B_6 | 1 | p_6 | 1200	p_8	cp_2	p_8+cp_2	-	$((\overline{bc}_6+bc_4)\overline{bc}_2)+bc_2$ $=\overline{bc}_6+bc_4+bc_2$
11	1100	I_{11}		B_6 | 1 | p_6 | 1200	p_{10}	0	-	-	$\overline{bc}_6+bc_4+bc_2$
12	1200	I_{12}		empty	p_{10}	cp_6	$p_{10}+cp_6$	-	$\overline{bc}_6+bc_4+bc_2+(bc_6\cdot\overline{bc}_4\cdot\overline{bc}_2)$ $=1$
13	1300	I_{13}		empty	p_{12}	0	-	-	1

Equations -   for "I": $p_I=p_{out}=p_{in}+cp_{in}$;   for "B": $p_{out}=\overline{bc}\cdot p_{in}$, $cp_{out}=bc\cdot p_{in}$

FIG. 6